

Debugging your JavaScript

Debugging your
JavaScript, HTML,
and CSS

Debugging your
JavaScript, HTML,
and CSS on Desktop
and Mobile

Making Your Web Stuff Work

Who am I?

- Raymond Camden
(raymondcamden.com)
- Senior Developer Evangelist @ Adobe
- @cfjedimaster
- I make bugs for a living





So, um, we have a
problem

It isn't the bugs

9/9

0800 Arctan started
 1000 stopped - arctan ✓ { 1. 2700 9.032847 025
 13^o 46' 03.1 MP - MC 2. 130476475 (25) 9.032846 995 const
 033 PRO 2 2. 130476415
 const 2. 130476415

Relays 6-2 in 033 failed special speed test
 in relay 10.00 test.

1100 Started Relay's changed
 1525 Started Cosine Tape (Sine chart)
 Started Multi. Adder Test.

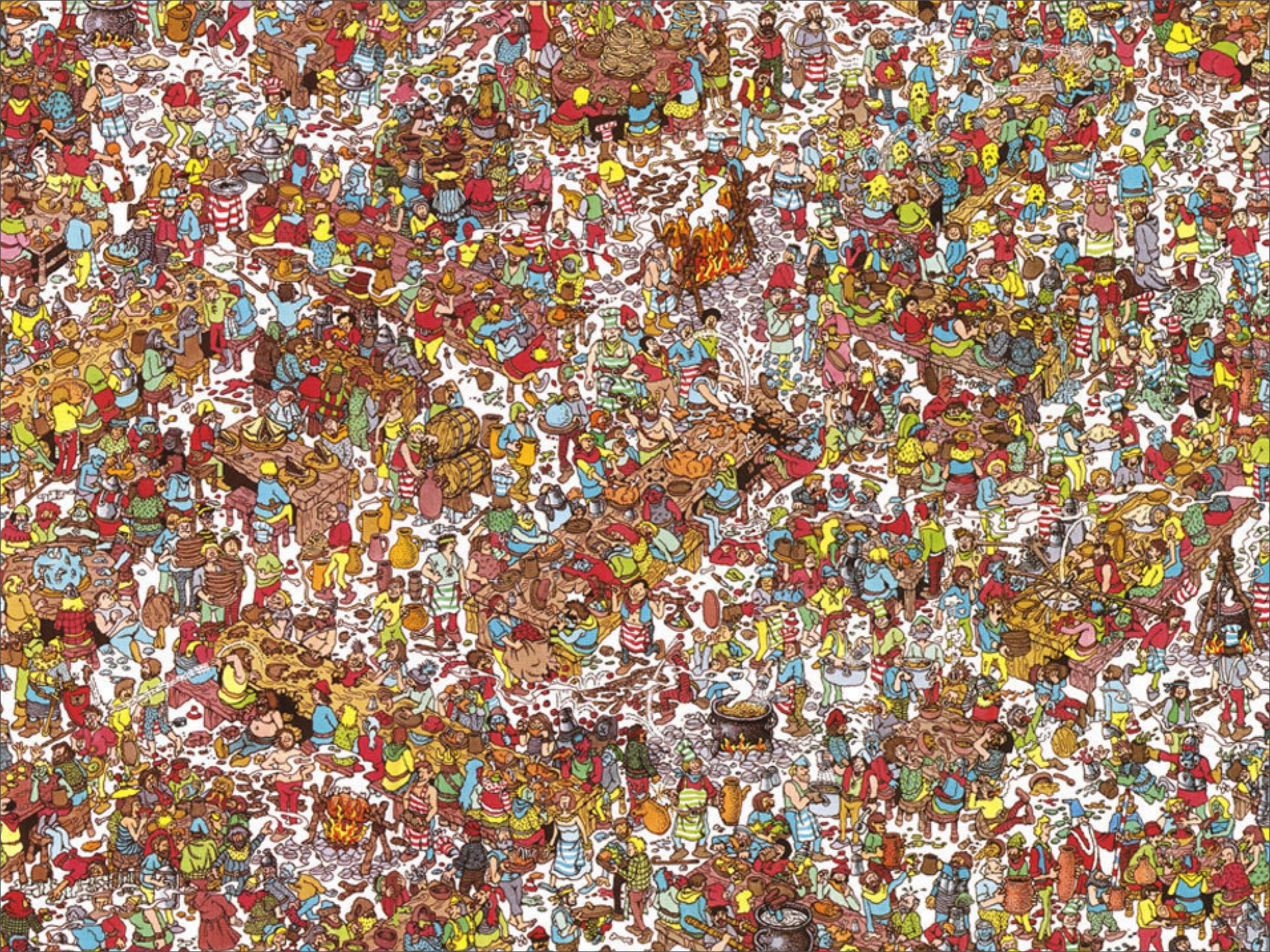
1545



Relay #70 Panel F
 (moth) in relay.

1625 Arctangent started.
 1700 closed down.

The problem is
finding the bug



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SAN FRANCISCO, CALIFORNIA
JUNE 28 & 29, 2012
events.jquery.org

Interactions

- [Draggable](#)
- [Droppable](#)
- [Resizable](#)
- [Selectable](#)
- [Sortable](#)

Widgets

- [Accordion](#)
- [Autocomplete](#)
- [Button](#)
- [Datepicker](#)
- [Dialog](#)
- [Progressbar](#)
- [Slider](#)
- [Tabs](#)

Autocomplete

Theme: UI lightness ▾

New window

Examples

- [Default functionality](#)
- [Remote datasource](#)
- [Remote with caching](#)
- [Remote JSONP datasource](#)
- [Scrollable results](#)
- [Combobox](#)
- [Custom data and display](#)
- [XML data parsed once](#)
- [Categories](#)
- [Accent folding](#)
- [Multiple values](#)
- [Multiple, remote](#)

Tags:

What has to work...

What has to work...

- JavaScript enabled

What has to work...

- JavaScript enabled
- jQuery Loaded

What has to work...

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- jQuery Loaded
- jQuery UI Loaded

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- Have to ensure your setup options match what the control needs

What has to work...

- JavaScript enabled
- jQuery Loaded
- jQuery UI Loaded
- jQuery UI CSS Loaded
- Have to select the right DOM for the autocomplete
- Have to ensure your setup options match what the control needs
- Have to ensure your data source (which is probably remote) is working right

Lots of Opportunities

WE SHALL DECIDE



The First
Bug
is one you
probably don't
know you have



Can you spot the bug?

Myspace | Social Entertainment

myspace Sign up Login Search People Music Video Games Browse People

http://www.myspace.com/ Google

Enter today with an existing YouTube video link, for a chance to win up to \$25,000 and open for a National Act!

2011 WAS BIG NATIONAL ACTS INCLUDED: PLAIN WHITE T'S

FANS CAN ENTER FOR A CHANCE TO WIN AWESOME PRIZES

CHARTER INTERNET SPEEDS UP TO \$29.99 30 MBPS LEARN MORE

Restrictions apply.

MYSPACE MUSIC PLAYER LAUNCH ▾

TOP HIP HOP PLAYLIST

Chris Brown & Usher get along on this playlist

SEEKING A FRIEND FOR THE END OF THE WORLD

'Who's More Likely To' with Steve Carell, Keira Knightley & the cast WATCH ▶

Sign up free Already a member? Login OR Connect with Facebook Raymond Camden, Ryan Vikander and Mike Andler use Myspace.

NEW MYSPACE PLAYLISTS

MUSIC SONG CHARTS

MUSIC VIDEO CHARTS

Open Player ▶

Music News

IN THIS LIST

AROUND HERE

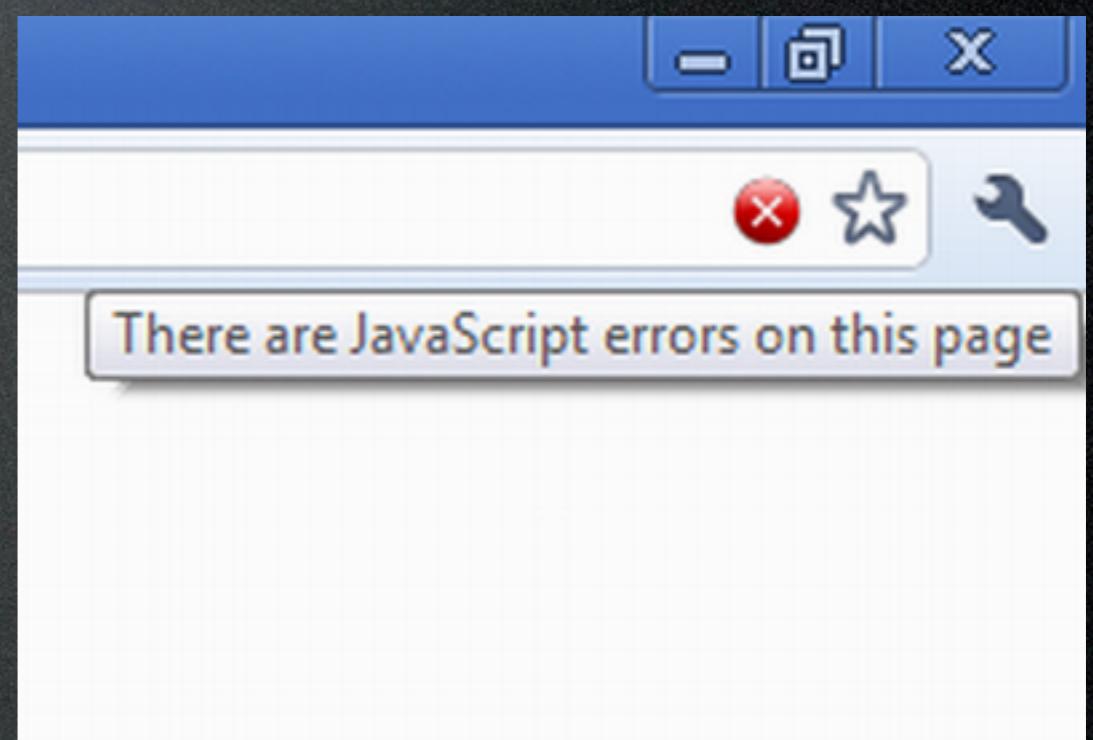


Being Proactive

- Checking the tools we're going to cover later
- Unit Testing

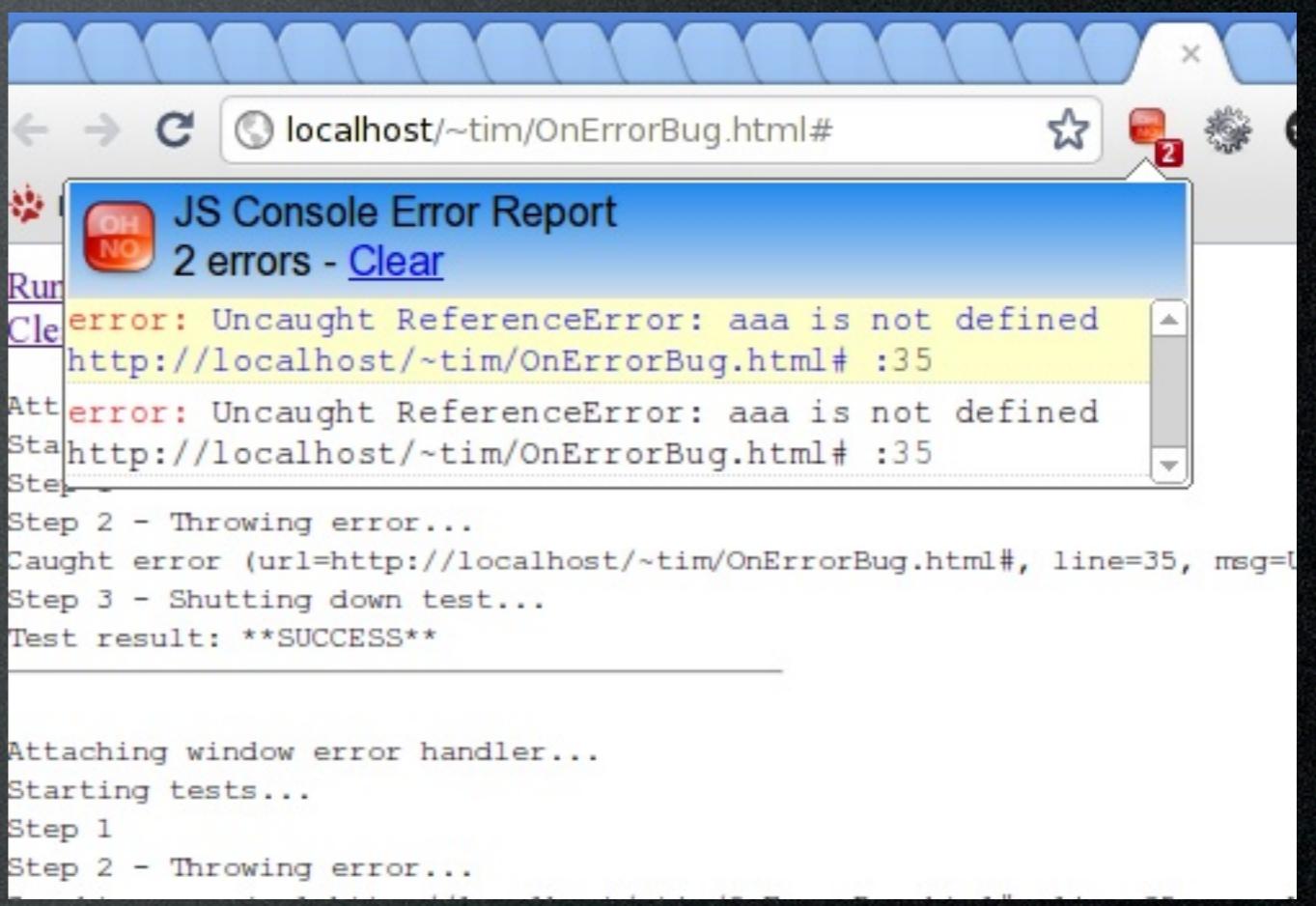
Chrome Extensions

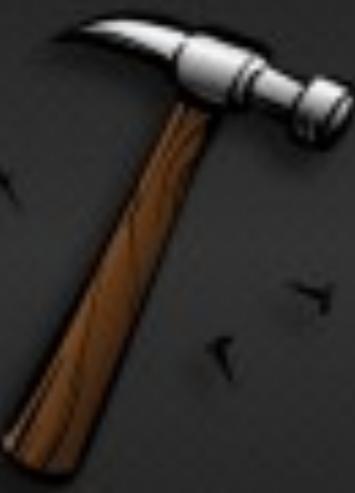
- javascript-error-notifier
- <http://code.google.com/p/javascript-error-notifier/>



Chrome Extensions

- jsError
- <https://github.com/schm erg/JSError>





{errorception}

- <http://errorception.com/>
- 30 day trial
- \$5 plan that reports up to 500 errors
- Works via simple embed

{errorception}

Showing all errors

Access is denied.

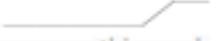
On line 18 of <https://apis.google.com/js/plusone.js> on 139 different pages.

 255 occurrences this week

 Seen in 2 different versions of Internet Explorer. Last seen 3 minutes ago. Occurred 255 times so far. Occurred before page load.

Отказано в доступе.

On line 18 of <https://apis.google.com/js/plusone.js> on 2 different pages.

 2 occurrences this week

 Seen in Internet Explorer 9. Last seen 33 minutes ago. Occurred 2 times so far. Occurred before page load.

window.frames.print_frame_D1897B91BF2BEB0CBCEDA700AAF476C4 is...

 1 occurrence this week

In an inline script on <http://www.raymondcamden.com/index.cfm/2011/4/5/Collapsible-content>...

 Seen in Firefox 13. Last seen 3 hours ago. Occurred once so far. Occurred after page load.

Accès refusé.

 14 occurrences this week

On line 18 of <https://apis.google.com/js/plusone.js> on 11 different pages.

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred 14 times so far. Occurred before page load.

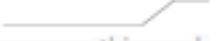
הגישה נדחתה.

 1 occurrence this week

On line 18 of <https://apis.google.com/js/plusone.js> on 1 page.

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred once so far. Occurred before page load.

Åtkomst nekad.

 2 occurrences this week

On line 18 of <https://apis.google.com/js/plusone.js> on 2 different pages.

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred 2 times so far. Occurred before page load.

Toegang geweigerd.

 8 occurrences this week

On line 18 of <https://apis.google.com/js/plusone.js> on 6 different pages.

Access is denied.

Where

[Line 18 in https://apis.google.com/js/plusone.js](#)

Note: Line numbers may not be too useful in IE. Curse it!

Browsers

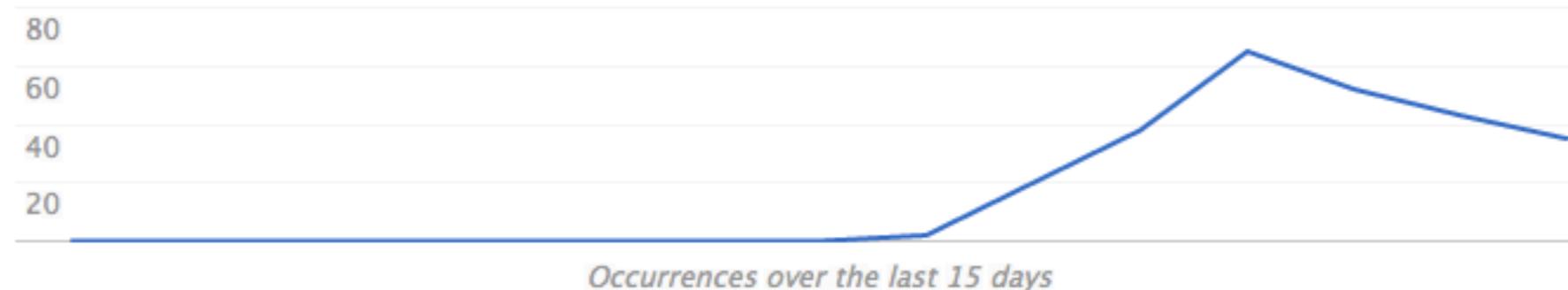


When

Before page load

Occurrences

255 total occurrences. First seen 6 days ago. Last seen 5 minutes ago.



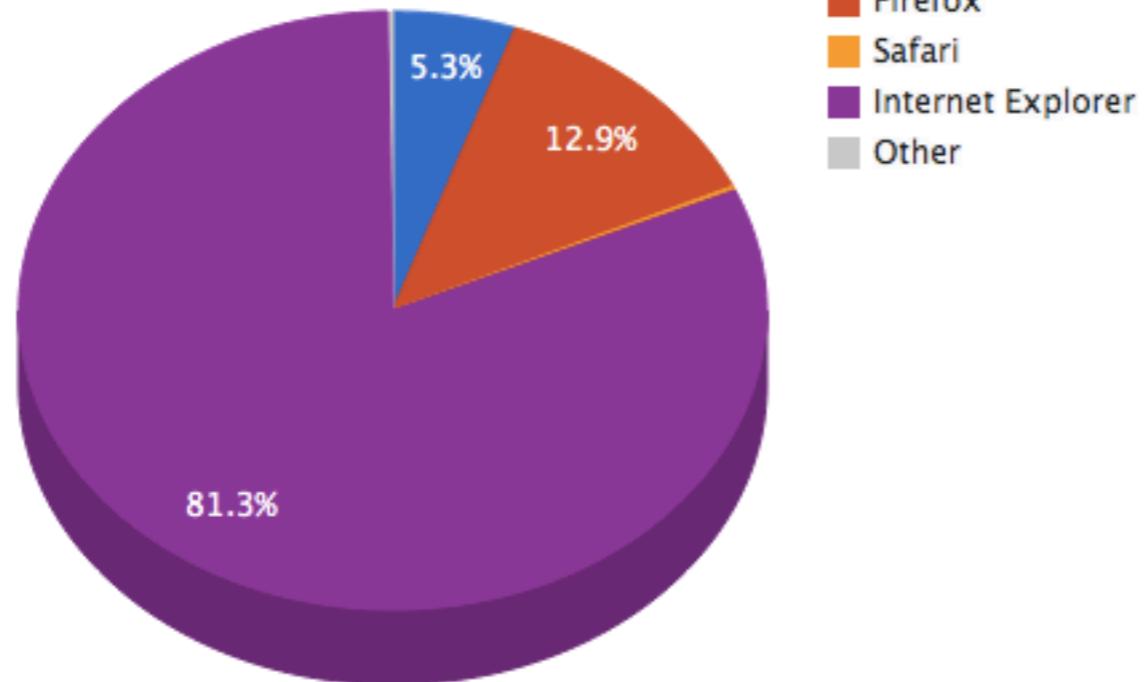
On pages

<http://www.raymondcamden.com/index.cfm/2011/4/3/Example-of-jQuery-Mobile-...>
<http://www.raymondcamden.com/index.cfm/2011/3/9/Adding-driving-directions-t...>
<http://www.raymondcamden.com/index.cfm/2012/1/19/Downloading-files-to-a-Ph...>
<http://www.raymondcamden.com/index.cfm/2009/2/10/An-Introduction-to-jQuery...>
<http://www.raymondcamden.com/index.cfm/2007/7/26/Getting-a-page-from-a-P...>
<http://www.raymondcamden.com/index.cfm/2012/6/11/ColdFusion-Developer-Wee...>
<http://www.raymondcamden.com/index.cfm/2009/11/17/Looking-For-Writing-Cold...>
<http://www.raymondcamden.com/index.cfm/2009/2/9/An-introduction-to-jQuery-...>

Graphs



Browsers



■ Chrome
■ Firefox
■ Safari
■ Internet Explorer
■ Other

Browsers	Errors
Internet Explorer	993
Firefox	157
Chrome	65
Safari	3
Chromium	1
iPad	1
RockMelt	1
Total	1221

You've got a bug, now what?

- Learn your browser tools
- It doesn't necessarily matter if it's not your standard browser
- And guess what - you can use more than one (really)

Chrome Dev Tools

- Wrench -> Tools -> Developer Tools
- Keyboard combo
- Run at bottom, right, detached



What we care about...

- Console
- Network
- Elements
- Scripts/Sources
- Resources

Console

- Errors show up here
- You can run commands here as well as code in your page
- You can view log messages here

console API

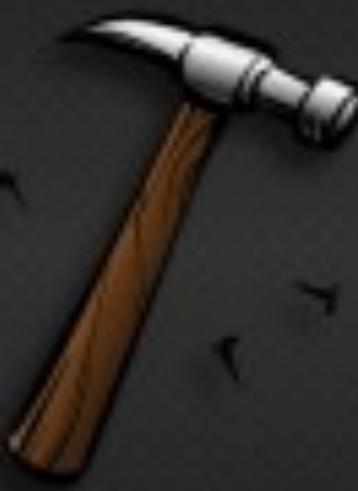
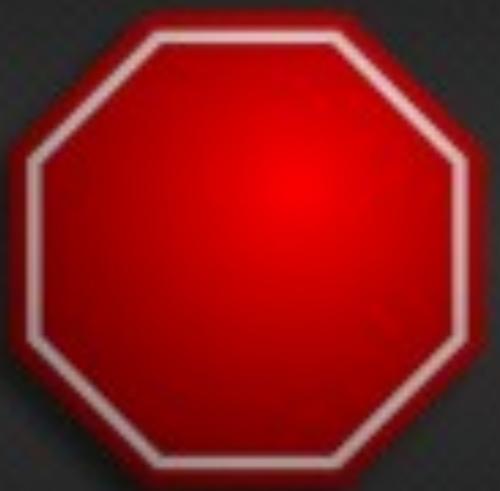
- Your code can send messages to the console
- I use the heck out of this
- No, really, I make logs like a lumberjack

console API

- [http://getfirebug.com/wiki/index.php/
Console_API](http://getfirebug.com/wiki/index.php/Console_API)
- **log**, error, warn, info, count, debug,
profileend, trace, dir, dirxml, assert,
time, profile, timeEnd, group,
groupEnd

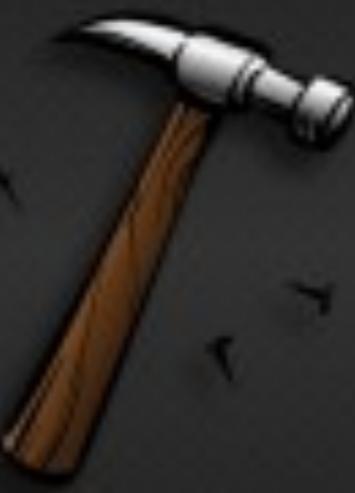
console.log

- `console.log("this works");`
- `console.log("What is X "+x);`
- `console.log("X",x);`
- `console.log(object);`



console.dir

- Dumps an object
- Great for introspecting remote data
- Firebug does it nicer (a bit)



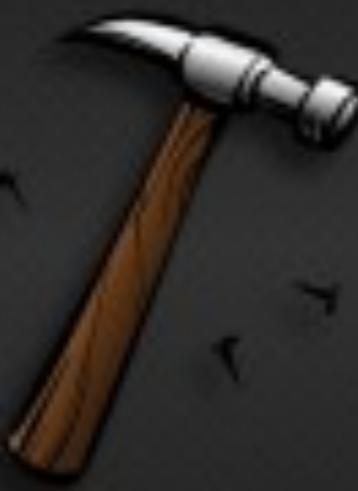
Network Requests

- Check the output
- Check **all** the output
- Look for things like redirects on session timeout
- JSON/P is a bit different



Elements

- Handy for looking at your DOM
- Which may be dynamic (ColdFusion, Ruby, PHP, etc)
- Which may be dynamic (JavaScript)



Scripts/Sources

- List of all the scripts on your page
- This is your debugger
- (p.s. note the stop on error magic trick)

Debugger Key Terms

- Breakpoints
 - Specific
 - Dynamic
 - DOM Change, XHR, Events
- Stepping
 - Multiple ways to progress



Resources

- Cookies, Databases, IndexedDB, Local (and Session) Storage, Application Cache
- As well as HTML, JS, CSS

The State of Mobile



Desktop is Awesome!

Mobile has “opportunity to grow”



First rule of mobile testing -
don't test on mobile!



Testing on Desktop

- PRO: Much, much, much quicker
- CON: Network access
- CON: Hardware access
- CON: Look and feel

CON: Network Access

- You're AJAX code can't open URLs on remote servers
- Chrome makes this easy:
 - `open -a /Applications/Chrome\ Dev/ Google\ Chrome.app --args --allow-file-access-from-files --disable-web-security`
 - JSONP and CORS

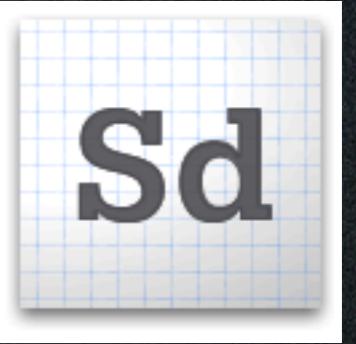
CON: Hardware Access

- onDeviceReady
- Trust the Gap

CON: Look and feel

- Use a UI framework like jQuery Mobile
- Use....

Adobe Shadow



- Syncs your desktop and mobile devices
- Takes screenshots, handles caches
- Made with pure Awesome-sauce



Testing on Device

- You must do this.
- See the bullet point above.

Options?

- Shadow, again
- Weinre (debug.phonegap.com)
- Console FTW

The Last Resort



OVERCONFIDENCE

This is going to end in disaster, and you have no one to blame but yourself.

Questions?

- You can email me here:
raymondcamden@gmail.com
- You can view my blog here:
raymondcamden.com